Oregon
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August 31, 2005

Rob Jones
NOAA Fisheries
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Portland, Oregon 97232-2737

Dear Rob;

The Oregon Department of Fish and Wildlife (ODFW) is submitting the attached report describing the coho salmon fishery in Siltcoos and Tahkenitch lakes in 2004 and our proposal for a fishery in 2005. Consistent with the Fisheries Management and Evaluation Plan (FMEP) for the fishery, ODFW requests that the National Oceanic and Atmospheric Administration (NOAA) provide written concurrence with the proposed fishery for the upcoming season.

The ODFW thanks NOAA for cooperatively working to initiate this fishery the last two years. The 2004 fishery provided a harvest of about 675 adult and 547 jack coho salmon and generated about 20,000 angler hours of recreation. Coho salmon returns to the two lakes were very strong with spawner abundance near record levels. Public response to the fishery was positive. Overall, this fishery provided an example of the benefits that can be derived from successful native salmon recovery efforts.

For the 2005 season we are recommending a more conservative coho harvest from the two lakes as described in the attached summary report. Consistent with the approved FMEP, the ODFW is proposing a maximum harvest of 300 and 200 adult coho from Siltcoos and Tahkenitch lakes respectively which is half of last years quotas. Spawner abundance after this harvest should be adequate to meet criteria in the FMEP and provide maximum seeding of freshwater habitats. A creel survey will again be in place to monitor harvest relative to quotas for each lake.

Please contact Bob Buckman at our Newport Office to discuss technical aspects of the fishery including modification to next year's proposal if necessary. We look forward to your evaluation and response.

Sincerely,

Steve Williams

Steve Williams
Assistant Chief of Fisheries
Oregon Department of Fish and Wildlife
3406 Cherry Avenue NE
Salem, Oregon 97303

Cc: Lance Kruzic, Bob Buckman

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Siltcoos and Tahkenitch Lakes Coho Salmon Fisheries

Review of the 2004 fishery and proposal for the 2005 fishery

Prepared by:

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August 12, 2005

Introduction

A fishery for naturally produced coho salmon (*Oncorhynchus kisutch*) was initiated in Siltcoos and Tahkenitch lakes in December, 2003. During 2004, a more extensive fishery was opened on the two lakes. These fisheries are significant because they are the first targeted harvest of non hatchery coho salmon anywhere in Oregon since 1993.

Harvest was proposed for these lake basins due to public requests for the fishery and biological analysis showing naturally produced coho salmon populations in both lakes are stable and healthy with a harvestable surplus (Zhou, 2000). Coho production from these lakes has been more stable than in Oregon coastal rivers where populations declined severely during the 1990's. With the coast wide improvement of coho salmon production since 2001, a limited harvest in Siltcoos and Tahkenitch lakes was pursued under the premise that it would not jeopardize coho sustainability in these lakes or the remainder of the Oregon Coastal Coho ESU.

A fishery was proposed in 2004 because abundance forecasts and harvest impacts through Amendment 13 to the Pacific Coast Salmon Plan (PFMC, 2003) were within the limits discussed in the Fishery Management and Evaluation Plan (FMEP). The required review of the 2003 fishery and proposed fishery for 2004 was completed in June of 2004 (Buckman, 2004) and submitted to NOAA Fisheries. NOAA staff supported the fishery which was then sanctioned at the state level by Temporary Administrative Rules signed by the ODFW Director on August 30, 2004.

A requirement of the FMEP is to annually submit a report reviewing the previous years fishery and describing proposed fisheries for the upcoming year. This report fulfills that requirement.

Results for 2004

Fisheries

Recreational fisheries for coho salmon were opened in Siltcoos and Tahkenitch lakes starting on October 1, 2004 and extending until either December 31, 2004 or attainment of quotas, whichever came first. The quotas for adult coho and were set at 600 and 400 fish for Siltcoos and Tahkenitch lakes respectively. A statistical creel occurred over the entire fishery with weekly updates to provide timely monitoring of harvest relative to quotas.

Total harvest from Siltcoos Lake was estimated at 538 adults and 358 jacks with an additional 112 adults and 119 jacks caught and released (Table 1). The season on Siltcoos Lake was closed on November 19th in anticipation of the quota being met. Harvest from Tahkenitch Lake was estimated at 137 adults and 168 jacks with an additional 128 adults and 114 jacks caught and released (Table 2). The season on Tahkenitch Lake ran through the end of December. All coho caught from both lakes were naturally produced.

There was an in-season adjustment to the size criteria to distinguish between adult and jack coho salmon. At the start of the fishery, coho under 20 inches total length were considered jacks and those over 20 inches were considered adults. However, as the season got under way, it became apparent that jack coho salmon were frequently over 20 inches in length and that virtually all adults were at least 24 inches in length (Figure 1 and 2). Scale samples from coho in the 20-22 inch size range were consistently classified as jacks (Lisa Borgerson, personal communication, October, 2004). The modification of the size criteria to distinguish adults and jacks decreased the estimated adult coho harvest in Siltcoos Lake from 630 to 538 and decreased the estimated adult harvest in Tahkenitch lake from 158 to 137.

Angler effort was estimated at 15,193 and 4,599 hours for Siltcoos and Tahkenitch lakes respectively (Table 1 and 2). An estimated 20.25 angler hours were expended per adult coho caught and an estimated 28.2 hours were spent fishing for each adult coho retained on Siltcoos Lake. On Tahkenitch Lake an estimated 17.4 angler hours were expended per adult coho caught and an estimated 33.6 hours were spent fishing for each adult coho retained.

Table 1. Results of the coho salmon statistical creel survey on Siltcoos Lake during 2004.

Time	Adult coho estimates		Jack coho estimates		Angler
Period	Retained	Released	Retained	Released	Hours
Oct.1-3	7	0	72	27	1639
Oct. 4-10	3	0	16	0	1325
Oct. 11-17	36	10	67	27	1867
Oct. 18-24	76	5	59	18	1162
Oct. 25-31	105	0	55	8	2483
Nov. 1-7	83	8	38	21	2236
Nov. 8-14	202	82	37	7	3385
Nov. 15-21	25	7	14	11	1096
Total	**538**	**112**	**358**	**119**	**15,193**

Table 2. Results of the coho salmon statistical creel survey on Tahkenitch Lake during 2004.

Time Period	Adult coho estimates Retained	Released	Jack coho estimates Retained	Released	Angler Hours
Oct.1-3	0	0	0	0	307
Oct. 4-10	0	0	0	0	670
Oct. 11-17	0	0	0	0	160
Oct. 18-24	0	0	10	0	165
Oct. 25-31	25	24	20	25	401
Nov. 1-7	11	68	59	32	345
Nov. 8-14	44	32	71	57	970
Nov. 15-21	53	1	6	0	671
Nov. 22-28	2	0	22	0	535
Nov. 29-Dec. 5	0	0	0	0	207
Dec. 6-12	3	3	0	0	90
Dec. 13-19	0	0	0	0	56
Dec. 20-26	0	0	0	0	14
Dec. 27-31	0	0	0	0	9
Total	**137**	**128**	**189**	**114**	**4,600**

Figure 1.

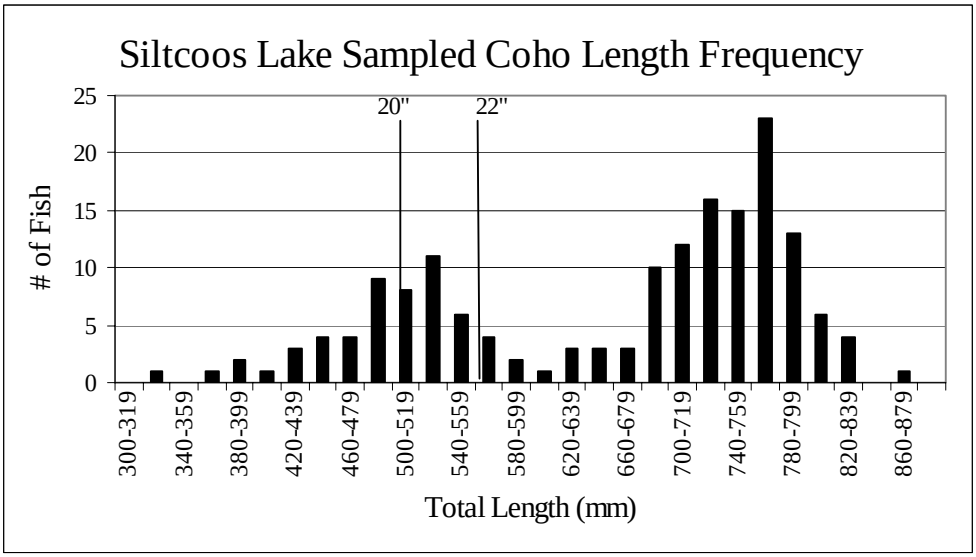
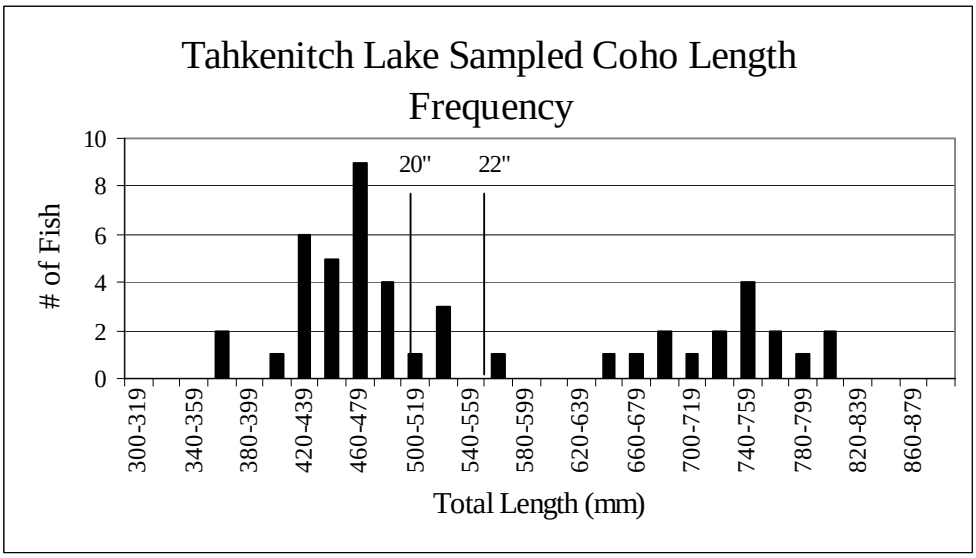


Figure 2.



Spawner Abundance

Preliminary Siltcoos and Tahkenitch lakes coho salmon spawner abundance estimates for 2004 are 8,025 and 2,869 for the two lakes respectively (Figure 3 and 4, appendix table 1). Both lakes are above the spawner abundance objective in the FMEP which was set at the upper bounds of the 90% confidence interval for the Maximum Sustained Production (MSP) spawner abundance (3,300 for Siltcoos and 2,200 for Tahkenitch) as described in Zhou (2000). The estimated spawner abundance was the highest observed in Siltcoos Lake since data collection started in 1960 and the second highest in Tahkenitch Lake over the same time period.

Public Response

Public response to the fishery was most often positive. Those supporting the fishery tended to be anglers, providers of services and supplies to anglers, or people that are philosophically supportive of limited terminal fisheries on healthy wild stocks. The response was particularly favorable among anglers with high optimism for another fishery in 2005.

The general sentiments from some environmental groups and land managers who opposed the fishery in 2003 still remained prior to the fishery in 2004. Opposition related to concern over harvest of a listed species, a perceived inconsistency in harvesting fish while requiring habitat protection, and ecological effects from harvest of fish that would otherwise fertilize the system as carcasses. However, these groups did not openly oppose the fishery once it got started and have not been vocal in light of very good spawner abundance following the fishery.

Figure 3.

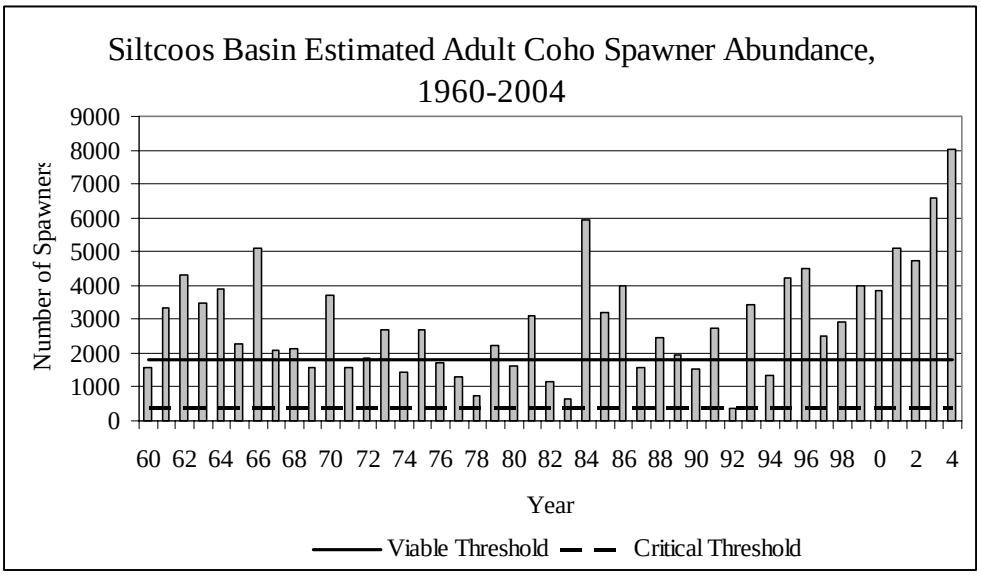
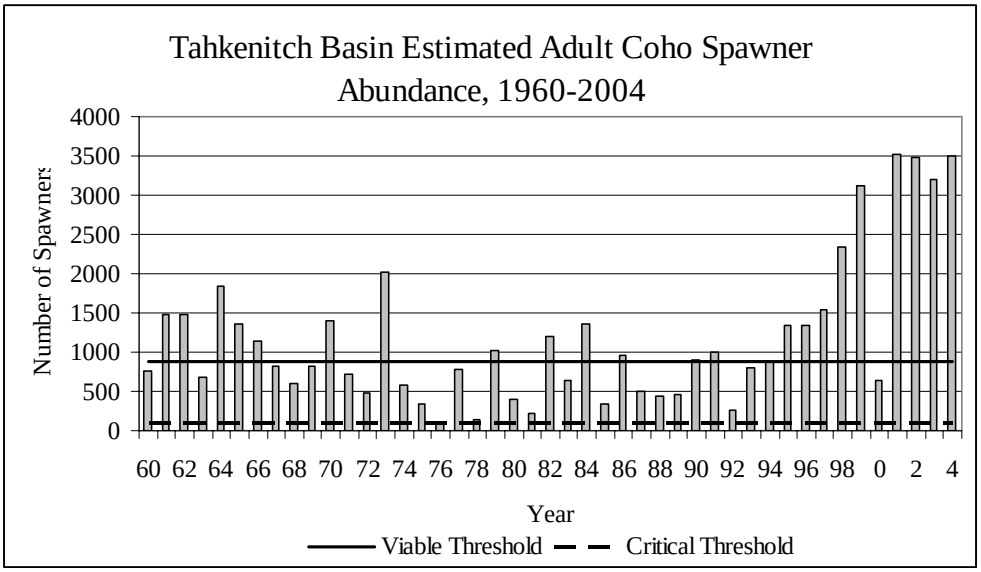


Figure 4.



Discussion

The second year of an Oregon Coast terminal fishery on healthy naturally produced coho salmon populations was successfully implemented in 2004. There was local support for the fishery and optimism it would continue in 2005.

Objectives for spawner abundance and harvest rate limitations were both met. The harvest rate for this fishery was 6.3 % and 4.6 % for Siltcoos and Tahkenitch respectively. This was much lower than the 15 % additional terminal area impacts for the South Central Sub-aggregate allowed by Amendment 13 (A-13) to the Pacific Coast Salmon Plan (PFMC, 2003). Participation and catch in the fishery was within expected ranges.

The creel survey worked out as planned. Data was entered and harvest estimates were generated within a few days after the end of each week. This allowed monitoring of the quotas and allowed an in-season projection of the date when quotas would be met.

The Siltcoos fishery was projected to reach its quota by November 19th. In response, the fishery was closed on that date. As it turned out the last few days of the fishery were slower than expected with the actual harvest from Siltcoos Lake about 10 % under the quota of 600 fish.

Law enforcement for the fishery was provided by Oregon State Police Trooper Scott Salisbury. Scott reported he did not observe or hear of significant violations. He thought that from an enforcement perspective anglers were well behaved and the fishery was appropriately designed.

There were no substantial problems associated with the fishery. Minor issues included difficulty distinguishing between boats that were duck hunters and anglers during creel surveys, uncertainty over the location of the "Snare Point Deadline" on one of the arms of Tahkenitch, and modifications in the size criteria for jack coho salmon.

2005 Fisheries

Management of 2005 Oregon Coast terminal wild coho fisheries in Siltcoos and Tahkenitch lakes will have more constraints than in previous years. Last year (2004), ocean fisheries were capped at a 15 % harvest ceiling under A-13, but the South Central sub-aggregate which contains Siltcoos and Tahkenitch lakes had a 30 % mortality cap. This left an additional 15 % allowable harvest mortality in Siltcoos and Tahkenitch lakes.

For 2005 coho fisheries, under A-13, all sub-aggregates have a maximum fishing mortality of 15 % (PFMC, 2005). Allowable harvest is reduced from last year because marine survival is projected to be universally poor. Ocean impacts to OCN coho in 2005 are projected at 10 % (Curt Melcher, personal communication, May 2005). Given the maximum fishing mortality of 15 % and the projected ocean mortality of 10 %, an additional 5 % impact on coho salmon is acceptable in these two lakes in 2005. Ocean impacts are below the 15 % ceiling because of constraints due to Klamath chinook,

Columbia River natural coho, southern Oregon and California natural coho, and high proportion non fin clipped coho anticipated in Oregon ocean selective recreational fisheries.

For Siltcoos and Tahkenitch lakes respectively, adult naturally produced coho returns are forecasted at 6,646 and 3,441 for the 2005-06 return. These predictions were made by assuming the 2005-06 return would be similar to the most recent three year average return for each lake. This is similar to methods used by the PFMC to forecast these stocks.

Quotas (rounded to the nearest hundred) can be 300 and 200 for Siltcoos and Tahkenitch lakes respectively based on an additional 5 % fishing mortality and forecasted stock sizes. This recommended option is consistent with criteria in the FMEP for terminal harvest (Table 3).

Table 3. Relationship between forecasted adult coho returns and harvest quotas as described in the FMEP for the Siltcoos and Tahkenitch lakes coho fishery (ODFW, 2003).

Number of Adult Coho Entering Lake	**Lake Fishery Adult Quota**
Siltcoos Lake	
<3300	No Fishery
3300-3900	No more than 300 fish
>3900	No more than 600 fish or max. allowable under Amendment 13 whichever is less,
Tahkenitch Lake	
<2200	No Fishery
2200-2600	No more than 200 fish
>2600	No more than 400 fish or max. allowable under Amendment 13, whichever is less,

Proposed fisheries for 2005

The ODFW proposes coho fisheries in Siltcoos and Tahkenitch lakes have quotas of 300 and 200 adult coho respectively which is half of the quotas for 2004. The season would run from October 1 through December 15 or until attainment of the quota, whichever occurs first. Seasons would be ended on December 15 instead of the end of the month because based on 2003 and 2004 fisheries there is very low effort and harvest during the second half of December. The two lakes will be managed independently with either lake shutting down if the quota is reached. Daily bag limits are proposed at one adult and one

jack coho per day. There will be no special gear restrictions. Open fishing areas will be the same as 2004 with the exception of moving the deadline on the Fivemile Arm of Tahkenitch Lake, from Snare Point upstream to the bridge on the 059 road off Douglas County road 49. Open areas include the outlet arm of each lake from the highway 101 bridges upstream to deadlines in the Maple and Fiddle Creek arms of Siltcoos Lake, and the Leitel and Fivemile Creek arms of Tahkenitch Lake.

To monitor the fishery, a creel survey will be conducted and spawning surveys carried out in similar fashion to 2004.

Further discussion

Alternative methods to forecast coho returns to the lakes in 2005 were investigated. The jack to adult relationship specifically for these lakes was found to produce only a weak correlation that was not of predictive value. However, it should be noted the 2004 jack returns to these lakes was very good suggesting the 2005 adult returns should also be reasonably strong (appendix table 1). Wild coho jacks observed in random spawning surveys were above average in the South Central, Umpqua and Mid Coast sub-aggregates under A-13. Wild coho jack returns to the North Oregon Coast were average while hatchery coho jack returns to Columbia River Hatcheries were below average. The overall pattern in jack returns to the Columbia River and Oregon Coast suggests 2005 adult returns will be down in the Columbia and North Coast, but better in the Mid, Mid south, Umpqua and coastal lakes. Coho smolt production monitored at five ODFW trap sites from the Siletz to the Umpqua all had average or above average abundance for the age class corresponding to the upcoming years adult returns. This again suggests 2005-06 returns to these lakes should be reasonably good. Information raising concern about coho returns to these two lakes is the very low catches in 2005 ocean fisheries. These fisheries took less than 10 % of the 40,000 coho quota in ocean fisheries south of Cape Falcon.

For 2005 fisheries, an alternative approach that was considered under A-13 was to view the sub-aggregate mortality caps as a collective mortality rather than a mortality that applied to each individual stock within the sub aggregate. Viewing the A-13 criteria of 15 % as a collective cap for the sub–aggregate would have allowed Siltcoos and Tahkenitch coho populations to have much higher harvest rates. This application of A-13 was not selected because it was not clearly described in the FMEP for the fisheries. The more conservative interpretation of A-13 was also taken because abundance of both wild and hatchery coho salmon appears to be low based on catch in ocean recreational fisheries off Oregon this summer.

The FMEP for these fisheries calls for a comprehensive review of the procedures for setting seasons after three years of the fishery. This coming fall will be the third year of the fishery so prior to consideration of 2006 seasons, procedures within the FMEP will be assessed and modified if necessary. A specific modification that will be considered is use of the A-13 marine survival forecast based on hatchery jack returns almost exclusively to the Columbia River. This forecast is not highly accurate at predicting marine survival of wild smolts on the central coast. The review could also address if A-13 harvest ceilings

are applied individually to all populations within a sub-aggregate or to the sub-aggregate as a whole.

References

Buckman, R. 2004. Review of the 2003 Siltcoos and Tahkenitch lakes coho salmon fishery. ODFW. Newport, Oregon.

ODFW (Oregon Department of Fish and Wildlife). 2003. Fisheries Management and Evaluation Plan. Oregon Coastal Coho, Siltcoos and Tahkenitch Lakes Coho Fishery. Salem, Oregon. November, 2003.

PFMC (Pacific Fishery Management Council). 2003. Final Amendment 13 to the Pacific Coast Salmon Plan. Portland, Oregon.

PFMC. 2005. Preseason Report 1. Stock Abundance Analysis for 2005 Ocean Salmon Fisheries. Portland, Oregon.

Zhou, S. 2000. Stock Assessment and Optimal Escapement of Coho Salmon in Three Oregon Coastal Lakes. Information Report Number 2000-7. Oregon Department of Fish and Wildlife. Portland, Oregon.

Appendix table 1.
Estimated spawner abundance of coho salmon in Siltcoos and Tahkenitch Lakes basins.

	Siltcoos		Tahkenitch	
Year	Adults	Jacks	Adults	Jacks
1960	1567	479	759	424
1961	3357	1178	1486	295
1962	4299	728	1485	189
1963	3494	2056	682	366
1964	3915	645	1849	398
1965	2264	1114	1367	454
1966	5122	568	1150	368
1967	2078	932	821	615
1968	2128	471	595	135
1969	1560	1938	821	863
1970	3723	942	1409	651
1971	1594	257	721	83
1972	1849	1264	477	559
1973	2705	792	2027	401
1974	1433	1917	582	521
1975	2697	696	349	920
1976	1722	412	105	82
1977	1312	359	786	76
1978	749	124	132	62
1979	2208	113	1017	169
1980	1645	300	406	163
1981	3108	1141	227	103
1982	1162	311	1210	559
1983	636	739	647	1446
1984	5953	1082	1360	546
1985	3212	1212	347	233
1986	3986	2090	955	457
1987	1555	238	495	262
1988	2468	283	449	160
1989	1963	651	451	472
1990	1529	419	899	796
1991	2730	317	1007	210
1992	368	187	264	641
1993	3415	402	791	192
1994	1345	731	880	420
1995	4240	923	1348	475
1996	4502	1405	1348	953
1997	2501	340	1539	805
1998	2943	963	2334	991
1999	4001	1168	3122	1714
2000	3835	1757	634	1071
2001	5104	436	3526	336
2002	4749	1425	3487	709
2003	6628	2336	3203	934
2004*	8025	2187	3496	627

*2004 data is preliminary and subject to change